2018

Zero Textbook Cost Syllabus for ENV 1004 (Fundamentals of Ecology-lab and recitation)

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ENV 1004: Fundamentals of Ecological Research (9021)
Fall 2018 Recitation/Lab
Monday, Wednesdays
ENV 1003L CMWB 8:30-8:55AM Recitation
ENV 1004 CMWB 9:05-10:20AM Laboratory

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Course Description:

Fundamentals of Ecological Research is a hands-on course designed to teach students the basic concepts and methodologies used in the field of ecology. The significance of ecological research to current environmental issues, both local and global, will be stressed throughout the course. Field trips to local ecosystems and educational sites are required.

Course Objectives (Learning Goals)

1) Students will be able to use mathematical and conceptual models to **predict** impacts of change on behavior, populations, communities, and ecosystems.
2) Students will be able to properly **utilize** basic experimental tools (e.g. scales, Google Sheets) and techniques (e.g., mark-recapture method).
3) Students will be able to **describe** the scientific process, **develop** and **test** hypotheses, and **differentiate** between dependent and independent variables.

All of the above concepts will be considered in relationship to the management and restoration of natural resources in the New York area and beyond. By the end of this course, you should be able **discuss** the complex linkages among biotic and abiotic factors that impact natural communities, **explain** how these factors may be measured, and **predict** impacts of change.

Course Structure: The course will consist of a mixture of lecture and lab activities.

Lectures: Lab introductions will parallel and supplement the material in the required readings. That is, some parts of the introductions will elaborate on material presented on the course website, whereas other parts will consist of novel material that is not covered on the site.

Lab and field activities will consist of activities that expose you to tools and issues faced by ecologists. These will range from handling and analyzing existing data sets to collecting information on biodiversity. You will also be responsible for visiting three off-campus locations related to ecology.

Lab Report: 1 properly formatted lab report will be due. Reports must include an introduction, materials and methods, results, and discussion. Other details regarding format will be discussed in class.

Readings: You will have readings assigned from the course website and possibly other material. **Material from these assignments may appear on the exams even though it may NOT be covered in lecture.**

Recitation: Recitation is a chance to review and expand on concepts that are introduced in lecture. You'll engage in discussions with your instructor and classmates on articles from various venues, be able to ask questions about homework and exams, and learn more about science and ecology. **Grades earned in recitation will count towards your overall grade.**

Course Materials and Tools Note: This is a zero-textbook course and part of the new zero-textbook initiative at CUNY. All resources are freely available from CUNY or other sources. Please let me know if you need help finding these resources. You should not have to purchase any resources.

All material (text links, lecture slides) is available @ https://sites.google.com/view/env10031004. Material is viewable from desktop, laptop, or mobile devices.

Assignments will be posted and submitted via Blackboard. It is the student's responsibility to check the course website on a regular basis for new assignments. **All assignments will be submitted or facilitated (e.g., discussions) via Blackboard; assignments will not be accepted via email**.

Additional Course Materials: A laptop (or suitable internet device) will be needed for homework and classwork activities.

Lab Assignments

Exams (2): Exams will cover the assigned readings up to the day of the exam.

Homework and Classwork: Classwork will take place in class; homework may include specific activities assigned through Blackboard or assignments related to class labs. These may include short quizzes on required readings, short responses to papers, lab follow-up or preview questions, etc. **Attempts will be made to announce homework in class, but assignments and due dates announced via Blackboard are considered final and over-ride any other information unless otherwise noted in writing**. It is the student's responsibility to check Blackboard for new assignments. At least **2** days will be given to submit any homework assignments (note: these may be focused on upcoming labs).

Writing Assignment: 1 properly formatted lab report will be due. Details will be posted on Blackboard and announced in class.

Oral Presentation: 1 group presentation will be made. Details will be posted on Blackboard and announced in class.

Required Field Exercise: You will be required to complete three field exercises (Bronx Zoo; American Museum of Natural History; New York Botanical Garden) on your own time once during the semester in lieu of classroom laboratory activities (see schedule).

Evaluation and Workload: These determine the grade you earn for the course.

ENV 1003L Recitation grade is determined as follows:
Article discussions\responses (n=5) = 500 pts
Group Presentation on Unusual Species Interactions (n=1) = 200 pts
General class participation = 100pts
TOTAL = 800 pts, *25% of your lecture grade

ENV 1004 laboratory grade is determined as follows:

Laboratory Exam I:	20%
Laboratory Exam II:	20%
Laboratory Assignments:	60% (see below for more details)
TOTAL:	100%

Laboratory Assignments (Total = 1000 pts) *60% of your total grade:
Field Reports (n=3) = 300 pts
Group Presentation (Bean Beetle Evolution) = 100 pts
Lab Report (Pokémon Diversity) = 200 pts
Online Assignments on Blackboard (n=2) = 200 pts
In-class Reading Assignment quizzes (n=10) = 10 pts*10 = 100 pts
General class participation = 100 pts

Grading Scale (%):

A	93-100	A-	90-92.9		
B+	87.1-89.9	B	83-87	B-	80-82.9
C+	77.1-79.9	C	73-77	C-	70-72.9
D+	65-69.9	D	60-64.9		
F	0-59.9				

Course Policies: These policies are based on ideas of fairness and respect.

***Grading Policies*:** Final course grades are non-negotiable and will **NOT** be curved or rounded in any way. Grades for individual assignments may or may not be curved depending on the class results. If a curve is instituted, I will determine a fair and reasonable curve, which will be applied to each individual's grade.

Grade changes will be made only to correct clerical errors. **Complaints about grades on individual assignments must be submitted in writing within a week following the return of the relevant assignment. Only reasonable and well-justified complaints will be considered**.

Make up exams and late assignments: Absences should only be for illnesses and family emergencies.

> **Exams**: Make up exams will not be given; instead, the grade earned on the final exam will replace the missed exam. Because of this, the second exam grade may also replace the first exam grade if that benefits a student. **Attendance at the second exam is required to pass the course**.
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> **Lab and Field Trip reports**: Late reports will receive a 20% reduction in grade per day.
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> **Homework and Classwork**: Late homework and classwork **will not** be accepted.

Attendance policy: Lab courses are designed as hands-on experiences that cannot be replicated via other learning methods. For this reason, attendance will be taken for each lab section, and attendance is a pre-requisite for turning in lab-related activities.

Baruch College attendance policy (Undergraduate Bulletin, p. 41): "All students are required to attend every session of their courses. If a freshman or sophomore is absent in excess of twice the number of class sessions per week, the instructor must give the student a WU grade, which counts as an F. The instructor

may give a junior or senior a WU grade (the equivalent of an F) for excessive absences. The WU grade may be given by the instructor at any time." Absences should only be for illnesses and family emergencies.

Disability or crisis issues: Accommodations for the class (extended exam time, reader, etc.) will be handled by the Office of Services for Students with Disabilities. Please contact them directly (Newman Vertical Campus, Room 2-271, 646-312-4590, Disability.Services@Baruch.Cuny.edu) or speak to me regarding contacting them. If a major issue arises during the semester (family death, accident, etc.) please let me, the Departmental office, (506, 17 Lexington Avenue Building) or the Student Affairs office (deanofstudents@baruch.cuny.edu, 646-312-4570) know so efforts can be made to aid you during this time.

Academic Integrity: Baruch College's policy on Academic Honesty, which states, in part:

"Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the college's educational mission and the students' personal and intellectual growth. Baruch students are expected to bear individual responsibility for their work, to learn the rules and definitions that underlie the practice of academic integrity, and to uphold its ideals. Ignorance of the rules is not an acceptable excuse for disobeying them. Any student who attempts to compromise or devalue the academic process will be sanctioned. "

Cheating is the attempted or unauthorized use of materials, information, notes, study aids, devices or communication during an academic exercise. Examples include but are not limited to:

- Copying from another student during an examination or allowing another to copy your work
- Unauthorized collaborating on a take home assignment or examination
- Using unauthorized notes during a closed book examination
- Using unauthorized electronic devices during an examination
- Taking an examination for another student
- Asking or allowing another student to take an examination for you
- Changing a corrected exam and returning it for more credit
- Submitting substantial portions of the same paper to two classes without consulting the second instructor
- Preparing answers or writing notes in a blue book (exam booklet) before an examination
- Allowing others to research and write assigned papers including the use of commercial term paper services

Plagiarism is the act of presenting another person's ideas, research or writing as your own, such as:

- Copying another person's actual words without the use of quotation marks and footnotes (a functional limit is four or more words taken from the work of another)
- Presenting another person's ideas or theories in your own words without acknowledging them
- Using information that is not considered common knowledge without acknowledging the source
- Failure to acknowledge collaborators on homework and laboratory assignment

Academic sanctions in this class will range from an F on the assignment to an F in this course. A report of suspected academic dishonesty will be sent to the Office of the Dean of Students. Additional information and definitions can be found at: http://www.baruch.cuny.edu/academic/academic_honesty.html

ENV 1004 – Recitation/Laboratory Schedule—Fall 2018— M, W

Date	**Lecture Topic (by Dr. Gautam)**	**Recitation Topic (by Kurata)**	**Recitation Deadline**	**Lab Topic (by Kurata)**	**Lab quizzes and Deadlines**
August 27, 2018 (Mon)	Welcome	Introductions: Syllabus		Discuss Field Trips and Pokémon Diversity; Summarizing Data, **LAPTOP**	
August 29, 2018 (Wed)	Intro to Ecology	Science Communication **LAPTOP**		Measurement and Accuracy: Obtaining Data	In-class reading assignment Quiz 1
September 3, 2018 (Mon)	BARUCH CLOSED	BARUCH CLOSED	Post lecture questions on Blackboard	BARUCH CLOSED	
September 5, 2018 (Wed)	Physical Environment	Lecture Questions Q & A		Functional Response	In-class reading assignment Quiz 2
September 10, 2018 (Mon)	BARUCH CLOSED	BARUCH CLOSED		BARUCH CLOSED	
September 12, 2018 (Wed)	Physical Environment	No official meeting		No official meeting: Functional Response (Calculations)**: Group Meeting**	Functional response assignment due before mid-night
September 17, 2018 (Mon)	Physical Environment	Article Discussion: Shenandoah	Read & Post review questions on Blackboard before recitation	DAY 1: Bean Beetle Evolution (experiment overview)/Functional Response (Review)	In-class reading assignment Quiz 3
September 19, 2018 (Wed)	BARUCH CLOSED	BARUCH CLOSED		BARUCH CLOSED	
September 24, 2018 (Mon)	Physical Environment/Biomes	HW Review (Introduction, Physical Environment)		DAY2: Population Statistics (data collection, histograms)	In-class reading assignment Quiz 4
September 26, 2018 (Wed)	Biomes	Article Discussion: Plant Intelligence (Evolution/Biomes)	Read & Post review questions on Blackboard before recitation	DAY3: Bean Beetle Evolution (setup experimental cultures)	
October 1, 2018 (Mon)	Evolution	Article Discussion: Sterile Banana (Population Dynamics/Evolution)	Read & Post review questions on Blackboard before recitation	DAY4: Population Statistics (confidence intervals) **LAPTOP**	Complete USB tutorial
October 3, 2018 (Wed)	Evolution	No official meeting; Lecture Questions Q & A on Backboard	Post lecture questions on Blackboard	No official meeting; conduct off campus trips or collect Pokémon	
October 8, 2018 (Mon)	BARUCH CLOSED	BARUCH CLOSED		BARUCH CLOSED	
October 10, 2018 (Wed)	Population Dynamics	No official meeting: HW Review (Biomes, Evolution) on		No official meeting; conduct off campus trips or collect	

		Backboard		Pokémon*	
October 15, 2018 (Mon)	Population Dynamics	Exam review		No official meeting; conduct off campus trips or collect Pokémon*	
October 17, 2018 (Wed)	Lecture Exam I	No official meeting; Lecture Questions Q & A on Backboard	Post lecture questions on Blackboard	No official meeting; conduct off campus trips or collect Pokémon*	Pokémon Datasheet due Oct 17
October 22, 2018 (Mon)	Population Dynamics	Discuss Unusual Species Interactions and Assign Presentations		**Lab Exam I**	Online Assignment 1 Due before Mid-term Exam
October 24, 2018 (Wed)	Population Dynamics	HW Review (Population Dynamics)		Pokémon Diversity I (Data analysis); remove dead adult beetles from cultures! **LAPTOP**	In-class reading assignment Quiz 5
October 29, 2018 (Mon)	Species Interactions	Presentations on Unusual Species Interactions		Pokémon Diversity II (check calculations) **LAPTOP**	
October 31, 2018 (Wed)	Species Interactions	Presentations on Unusual Species Interactions		Plant Competition I	In-class reading assignment Quiz 6
November 5, 2018 (Mon)	Species Interactions	No official meeting; Lecture Questions Q & A on Backboard		No official meeting; conduct off campus trips* (Zoo)	
November 7, 2018 (Wed)	Species Interactions	No official meeting		No official meeting; conduct off campus trips* (Garden Trip)	Pokémon lab report due
November 12, 2018 (Mon)	Species Interactions	Lecture Questions Q & A		DAY5: Bean Beetle Evolution (collect data); mark-recapture methods (mark)***LAPTOP**	In-class reading assignment Quiz 7, Bring laptop,
November 14, 2018 (Wed)	Community Ecology	Article Discussion: Yellowstone Wolf Assignment Review	Read & Post review questions on Blackboard before recitation	DAY6:Mark-recapture methods (recapture)***LAPTOP**	Field report (Zoo trip) due
November 19, 2018 (Mon)	Community Ecology	HW Review (Species Interactions, Community Ecology)		DAY7: Review Bean Beetle work; Presentation Development meeting	Field report (Garden trip) due
November 21, 2018 (Wed)	Biogeography	Math Review		Plant Competition II, **LAPTOP**	In-class reading assignment Quiz 8
November 26, 2018 (Mon)	Biogeography	Lecture Questions Q & A	Post lecture questions on Blackboard before recitation	DAY8: Bean Beetle Evolution Presentations	

November 28, 2018 (Wed)	Ecosystem Ecology	No official meeting		No official meeting; conduct off campus trips (AMNH)	
December 3, 2018 (Mon)	Ecosystem Ecology	HW Review (Biogeography, Ecosystem Ecology)		Island Biogeography I **LAPTOP**	In-class reading assignment Quiz 9, Field report (AMNH) due
December 5, 2018 (Wed)	Conservation and Management	Article Discussion: Plastic Pollution	Read & Post review questions on Blackboard before recitation	Island Biogeography II, **LAPTOP**	
December 10, 2018 (Mon)	Conservation and Management	HW Review (Conservation and Management)		Citizen Science - how to stay involved **LAPTOP**	In-class reading assignment Quiz 10
December 12, 2018 (Wed)	Review/Catch-Up	Exam Review		Final Exam	Online Assignment 2 Due before Final Exam

* may be moved depending on bean beetle emergence